

EUROPEAN PATENT OFFICE

Patent Abstracts of Japan

PUBLICATION NUMBER : 11051103
PUBLICATION DATE : 23-02-99

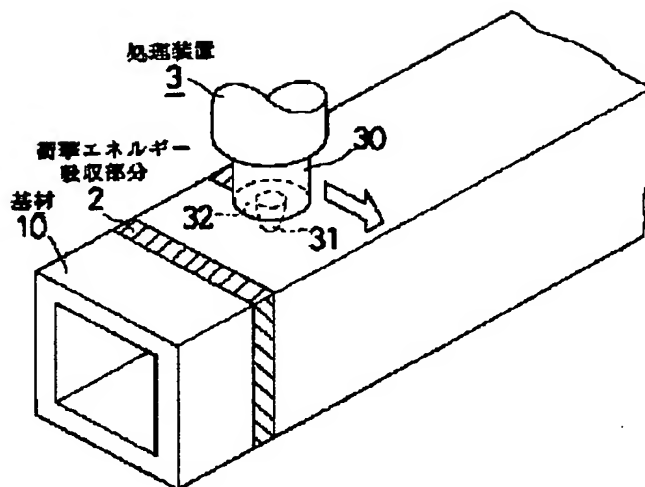
APPLICATION DATE : 30-07-97
APPLICATION NUMBER : 09204456

APPLICANT : SHOWA ALUM CORP;

INVENTOR : HASHIMOTO TAKENORI;

INT.CL. : F16F 7/12 F16F 15/02

TITLE : METALLIC STRUCTURAL MEMBER
HAVING IMPACT ABSORPTION
FUNCTION



ABSTRACT : PROBLEM TO BE SOLVED: To reduce weight and a cost of a metallic structural member having an impact absorption function without necessitating another impact absorption member by applying friction stirring treatment locally using a rotating probe to form an impact energy absorption part.

SOLUTION: A basic member 10 is a pipelike extruded member having a square cross section and is made of aluminum alloy. A probe 31 of a treatment device 3 is inserted into the basic member 10 until it passes through a peripheral wall by rotating it. An end face 32 presses a surface of the basic member 10. A rotator 30 and the probe 31 are moved over whole periphery of the basic member 10 while maintaining an insertion condition of the probe 31. The basic member 10 is plasticized and softened in the vicinity of its contact part with the probe 31 due to friction heat caused by slide contact of the probe 31 and the basic member 10. Moreover, it loses friction heat rapidly and is cooled and solidified after receiving progressive pressure of the probe 31 and flowing plastically to embed a groove through which the probe 31 passes. This phenomenon is sequentially repeated in accordance with the travel of the probe 31 to form a beltlike impact energy absorption part made of minute metallographic structure.

COPYRIGHT: (C)1999,JPO